



Royal 720 PLUS ECO



Royal 900

INSTRUCTIONS MANUAL

Solid fuel cooker - Royal 720 PLUS ECO/
Royal 900 PLUS

GBR

DEAR CUSTOMER,

We appreciate your trust dedicated to us and your determination to buy our product.

You made a good choice, since this oven has technical characteristics which place it into top class, and you will be assured of it during exploitation.

Please, carefully read this manual before you start to use his oven, since you will find tips and tricks for proper handling.

We believe that you will be one of the millions of satisfied customers of our products.

A.D. „Milan Blagojević“Smederevo

CONTENTS

Warning before use.....3

Description.....4

Installation.....6

Managing operation of the cooker.....9

Operating mode.....10

Cleaning and maintenance.....10

General notes.....13

Advices for environmental protection.....13

WARNING BEFORE USE

To obtain proper operation of your cooker, it is important to read this manual and strictly observe directions for use and handling.

For combustion, use solid fuels like woods, briquettes and low-caloric coal. It is forbidden to put explosive devices and materials into the firebox or on the plate. It is forbidden to keep combustible materials in direct vicinity of the oven.

For proper combustion, in normal operating mode, air flow in the chimney should be 10-12 Pa. In case if air flow is higher then 15Pa, flap should be installed into the chimney.

It is necessary on regular basis to ventilate room in which oven is located due to inflow of fresh air necessary for combustion.

Cooker parts get heated to high temperatures during operation and appropriate attention is necessary during handling. Do not allow children to handle and play in vicinity of the cooker.

Only spare parts approved by the manufacturer may be installed on the cooker. Do not make any changes to the cooker.

At the first firing up, slight smoking may occur, especially from the surface of the plate. It is common appearance which originates due to combustion of deposits on the plate surface (anti-corrosive protection, color, dust...). Room in which cooker is located should be ventilated during first firing up.

Do not allow part of the cooker to become incandescent.

On the same chimney, do not install any device which uses gas as fuel.

During firing up, use protective gloves since door handles and vessels are heated.

Customer must observe national and local regulations for oven installation.

In case of non-observance of this manual, manufacturer shall not accept any responsibility for damages on the cooker.

COOKER DESCRIPTION

Solid fuel cooker **ROYAL 720 PLUS ECO / ROYAL 900** are produced and tested according to the European standard EN 12815. **ROYAL 720 PLUS ECO / ROYAL 900** are intended for preparation of food (cooking and baking) and heating of rooms. Constructive working table of the cooker is consisted of nickel frame, steel plates and rounded inlets (fig. 1, position 2, 6 and 4). Connection for smoke exhaust is delivered with the cooker which, depending on the model, is made of gray cast iron. Gray cast connection is to be tightened with the screw to the plate and metal sheet connection is to be tightened with four screws to the lateral side (fig. 2).

Sealing between plate and frame is done with asbestos-free braid.

Burner area is built with waterproof bricks.

All cast parts are made of gray cast iron in order to provide longer life span.

Parts of the back and lateral side of firebox are protected with fireproof bricks, and bottom is protected with insulating material. Baking oven is enameled.

External lateral sides, firebox door, oven door, cover of tray and pan are made of steel sheet and protected with enamel.

Decorative profiles are made of aluminum with nickel surface.

Handles of firebox door, oven and trays may be of steel or cast, which depends on the cooker model. On the oven door, there is decorative ceramic glass.

Parts:

1. mask
2. frame
3. smoke exhaust connection
4. round plate inlet
5. button for mode selection
6. plate
7. firebox door
8. oven door
9. drawer
10. base
11. button for air flow regulation
12. cleaning aperture
13. grid handle
14. oven
15. pan
16. ashtray
17. accessories
18. cleaning kit

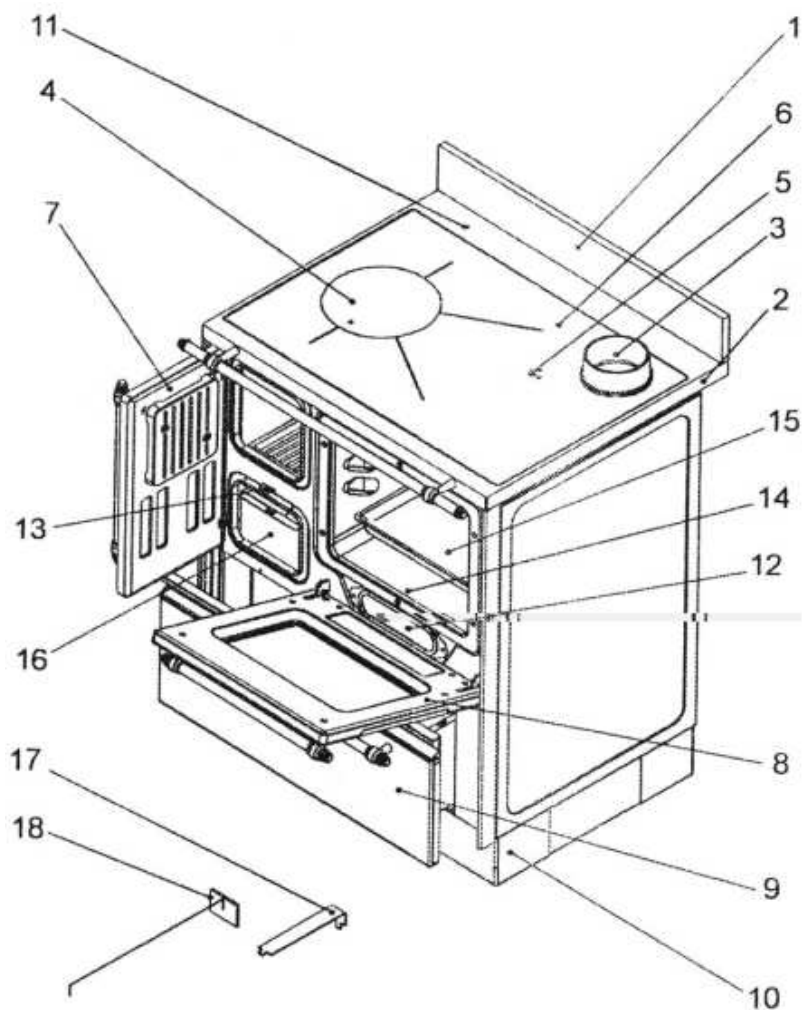


Fig. 1

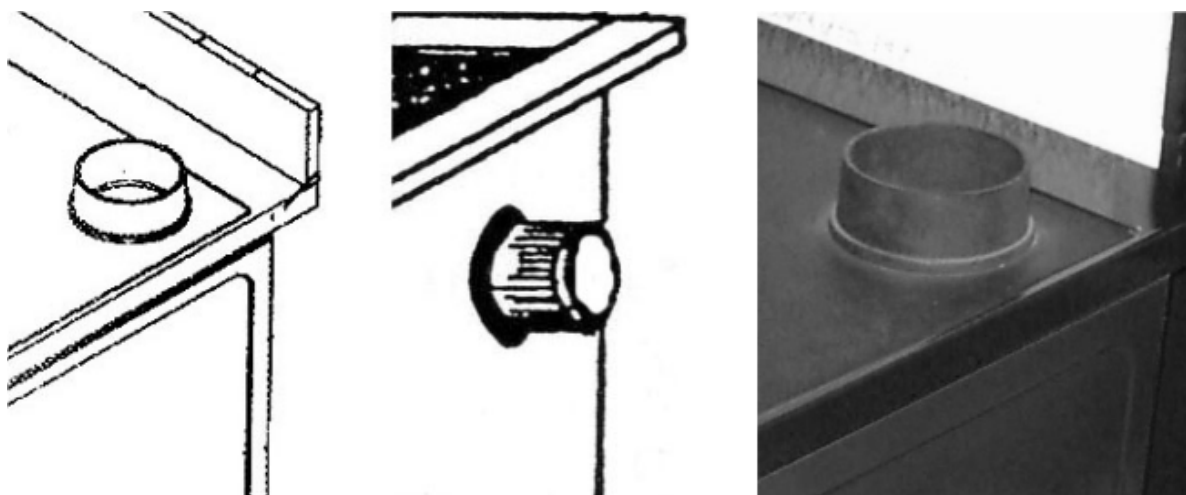


Fig. 2 – Positions of smoke exhaust connection

TECHNICAL DATA

Technical characteristics	
Product name	ROYAL 720 PLUS ECO
Product purpose	Solid fuel cooker
Nominal power (wood / coal)	8 kW
Efficiency	
- wood	73%
- coal	71%
Dimensions of cooker (HxWxD)	850 x 720 x 600 mm
Dimensions of firebox (HxWxD)	175 x 250 x 400 mm
Dimensions of oven (HxWxD)	270 x 350 x 470 mm
Weight	108 kg
Minimal distance from combustible materials	
- back	50 cm
- side	50 cm
- front	80 cm
Emission of CO (reduced to 13% O ₂)	
- wood	0,13 % \triangleq 1,7 g/m ³
- coal	0,05 % \triangleq 0,69 g/m ³
Emission of dust	
- wood	0,058 g/m ³
- coal	0,056 g/m ³
Chimney connection	Ø120 mm
Position of the chimney connection	left / right / back / central
Temperature of smoke gases	131°C
Air regulation	primary and secondary
Draft	10-12 Pa

Technical characteristics	
Product name	<u>ROYAL 900</u>
Product purpose	Solud fuel cooker
Nominal power (wood / coal)	9 kW
Efficiency	
- wood	60 %
- coal	62 %
Dimensions of cooker (HxWxD)	850 x 900 x 600 mm
Dimensions of firebox (HxWxD)	175 x 250 x 400 mm
Dimensions of oven (HxWxD)	270 x 500 x 470 mm
Weight	121 kg
Minimal distance from combustible materials	
- back	50 cm
- side	50 cm
- front	80 cm
Emission of CO (reduced to 13% O₂)	
- wood	0,35 %
- coal	0,37 %
Emission of dust	
- wood	0,058 g/m ³
- coal	0,056 g/m ³
Chimney connection	Ø120 mm
Position of the chimney connection	left / right / back / central
Temperature of smoke gases	Primary and secondary
Air regulation	10-12 Pa

INSTALLATION

Do not put the cooker in direct vicinity of wooden elements, cooling devices, plastic parts of the furniture and other combustible materials, since it creates high working temperature which is distributed at the exterior of the cooker (at the combustion of fuel). The least distance between cooker and surrounding elements is 50 cm, and combustible materials 80 cm.

If surface on which cooker is to be positioned is made of easily combustible material (wood, warm floor, laminated floor...) it is necessary to install metal sheet protection - lateral width 10 cm, in front 50 cm.

Due to its weight, it is necessary to install cooker on the floor with appropriate carrying capacity. If latter does not fulfill requirements, please take proper measures to achieve it (e.g. distribution of weight).

Cooker is to be connected with chimney through shuttles and via connection on the back side of cooker, in order to provide adequate sealing and smoke flow from cooker to the chimney. Shuttle may not be installed too deeply into the chimney to avoid reduction of cross-section of the surface thus impairing air flow in chimney. Do not use reducers which would reduce cross-section of the smoke exhaust pipe (shuttle).

Cooker requires intake of fresh air into the room in which it is installed, whereat surface of the opening for intake of fresh air may not be smaller than $0,4 \text{ dm}^2$. Device for intake of fresh air is to be mounted outside collective room for ventilation which must be secured with doors and grid.

Ventilators which work in the same room in which cooker is mounted may create disturbances with the cooker operation. Also, all devices or air conditioning which make sub-pressure in the room in which oven is installed must be adjusted not to make decompression which disables normal operation of the cooker.

Prior to installation of the cooker, check air flow in the chimney since it is one of the key factors of proper operation. Air flow depends on accuracy of the chimney and meteorological conditions. One of the simplest aspects for checking of the air flow in the chimney is using candle flame, as illustrated in the figure 2. Candle flame is to be offered to connection opening of the chimney and, if it sways towards opening, air flow is satisfactory (fig. 2b). Weak swaying of the flame is indicator of weak air flow (fig. 2a).

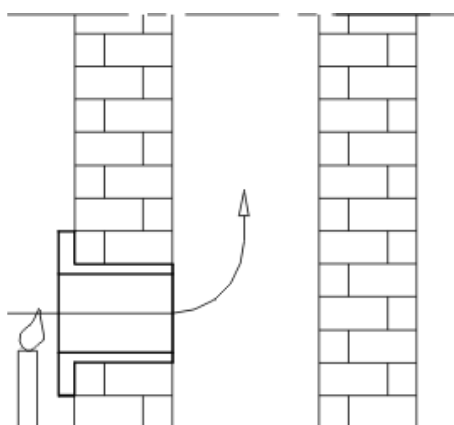


Fig. 2a

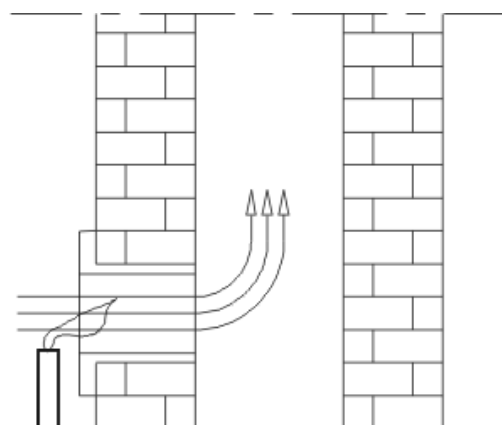


Fig. 2b

If air flow in the chimney is weak (Fig. 2a), check accuracy of chimney. Chimney should be located within interior of an object, and if it's on external walls of an object, it is recommended to insulate the chimney.

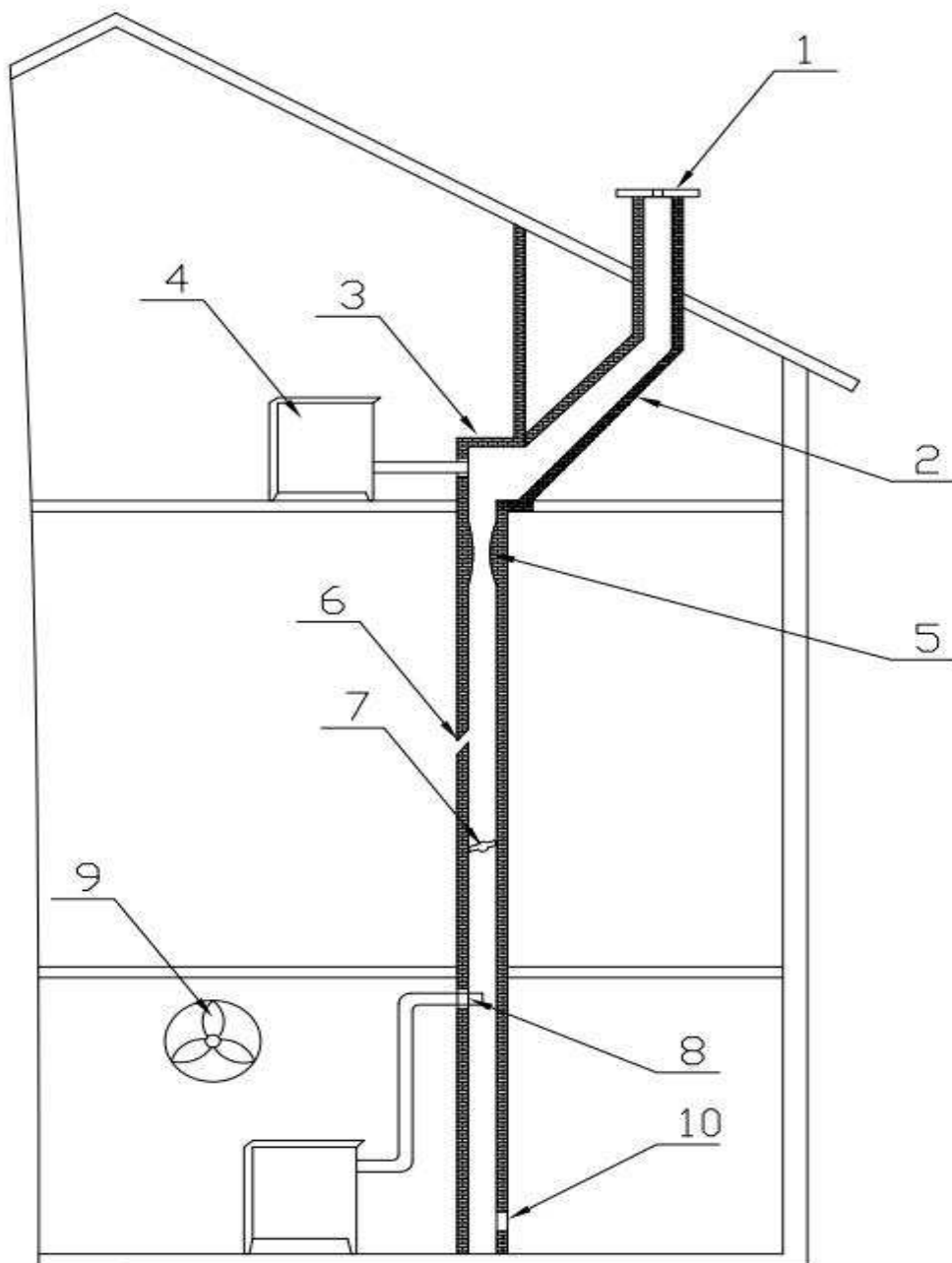


Fig. 3

Defaults of the chimney may be (fig. 3):

1. Chimney is lower than top of the roof, small cross section of the exit
2. Too large slope
3. Abrupt alteration of the direction of smoke channel,
4. Cooker or other device connected to the same smoke channel,
5. Bulges in the smoke channel,
6. Cranks,
7. Foreign body or deposited smut,
8. Too deep installed pipe,
9. Ventilator or other device which creates sub-pressure in the room
10. Leaky or open aperture for cleaning

MANAGING OPERATION OF THE COOKER

Start firing up with moderate fire in terms of avoiding thermal shocks.

Following quantity of woods is to be inserted only when previous quantity gets burned.

Do not allow clogging of the grid with ashes and unburned fuel. Clean the grid.

Open the door slowly and carefully, not abruptly, enabling equalization of pressures in the burner and room, otherwise, it may cause occurrence of smoke in the room.

Cooker is designed and provided for operation with constantly closed firebox door, except during filling with fuel. Do not open door unnecessarily.

Wood must be with maximal 20% humidity for maximal burning performance. Otherwise, tar and gases occurs which create creosote with water vapor. If creosote occurs in larger quantity, fire may occur in the chimney.

Fire in the chimney will be easily recognized as follows: characteristic sound which comes from the chimney like loud hoot, visible flame which comes from chimney, high temperature of surrounding walls and characteristic smell of flare.

If fire occurs, take following steps:

- Immediately call fire department
- Suppress oxygen inflow into the chimney and turn off the cooker
- Do not put anything in chimney and look after fire not to extend to the wooden construction or some other inflammable material in vicinity.
- **NEVER extinguish the chimney with water or to pour water in the cooker**
- Fire in the chimney may be extinguished only with the device with dry powder
- Water may be used only for surrounding materials

Do not cool surrounding walls with water

Comment:

If fire in the cooker in any reason becomes dangerously strong, do as follows: close air flaps which provide air for combustion. If necessary, put some specially prepared sand into the firebox or special fireproof extinguishing blanket. It would be good to have fire-extinguishing device.

Prior to second filling, clean the grid with auxiliary tools to avoid clogging of fresh air intake. Regularly clean ashtray taking care to maintain it always clean.

Button for operating mode selection (fig. 9), has two positions:

- „O“ - for firing up and and cooking
- „Z“ - for cooking, baking and heating

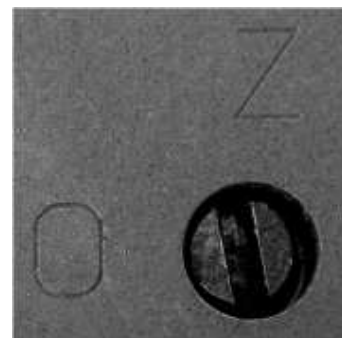


Fig. 9

OPERATING MODES

ROYAL 720 / 900 cooker have four modes which are regulated using buttons for selection of operating mode and air flow regulation in the cooker.

COMBINED – for simultaneous cooking, baking and heating. Put selection button into position „Z“ and air flow regulator to value between MAX and MIN

QUICK COOKING - requires intensive heating of the plate, by adding fuel in smaller amounts, by setting mode selection button into position „O“, air flow regulator on medium value (between MAX and MIN) and oven door always closed.

HEATING – mode selection button into „Z“, air flow regulator on medium value and oven door open. If coal is used as fuel, fill in the burner several times in order to create quality cinder which can sufficiently heat the plate.

ROASTING/BAKING - mode selection button into „Z“, air flow regulator on medium value and oven door open after putting in the pan.

CLEANING AND MAINTENANCE

Regular cleaning enables proper operation and longer life span of the oven. All external and internal cleanings are to be done on cold oven.

Cleaning of external surfaces – with soft cloth which will not damage cooker surfaces. Chemical cleaning agents may be used and don't damage surfaces of the oven. Do not clean colored and enameled surfaces with abrasive agents.

Cleaning of internal surfaces –when clean, use protective gloves.
Clean internal walls of the firebox against deposited smut, collect small and unburned particles from the grid, clean ashtray and deposited ash within the oven.

In order to clean the channels for combustion gas products, you must disassemble some cooker parts.

Disassembly is done as follows:

- remove smoke pipes,
- remove round inlet of the plate with auxiliary tools,
- remove plate or plates (depending on model),
- dismount oven door as follows (fig. 10):
 1. open door
 2. both hinge limiters into upper position,
 3. gently push door to the oven, in order to lean it on limiters,
 4. pull door upwards then lower part of the oven.
- unscrew button through which cleaning aperture is tightened (fig. 1. Pos. 12)
- remove cleaning cover.

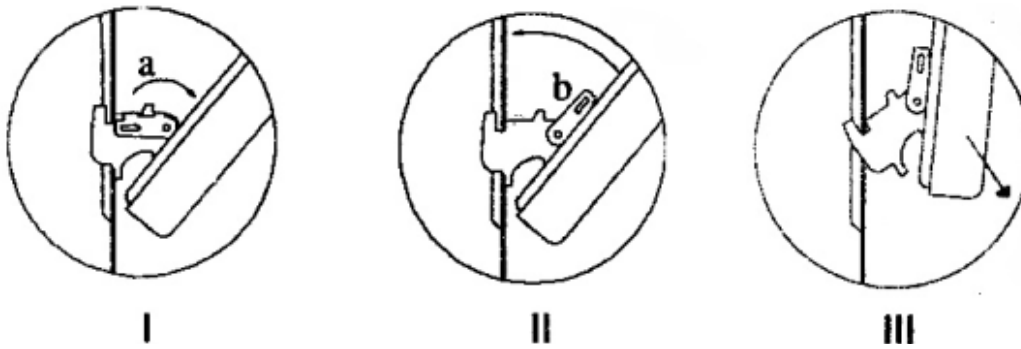


Fig. 10

Cleaning of the oven interior from the tar (fig. 11) is to be done after previously described disassemble, as follows:

- remove tar from protective sheet of the oven using cleaning tools, clean and put it on the bottom by pressing in the vertical part of the channel for flow of the combustion gas products.
- clean tar from vertical channels as previously described
- lower surface of the oven and bottom are to be clean using cleaning tools (fig. 1, Pos. 17), by pulling towards opening for cleaning which is already removed as described before (fig. 1, pos. 12)
- plate (fig. 1, pos. 6) and round inlet (fig. 1, pos. 17) are to be cleaned with cleaning tools

After cleaning, assembly is to be done in reverse order of the disassembly.

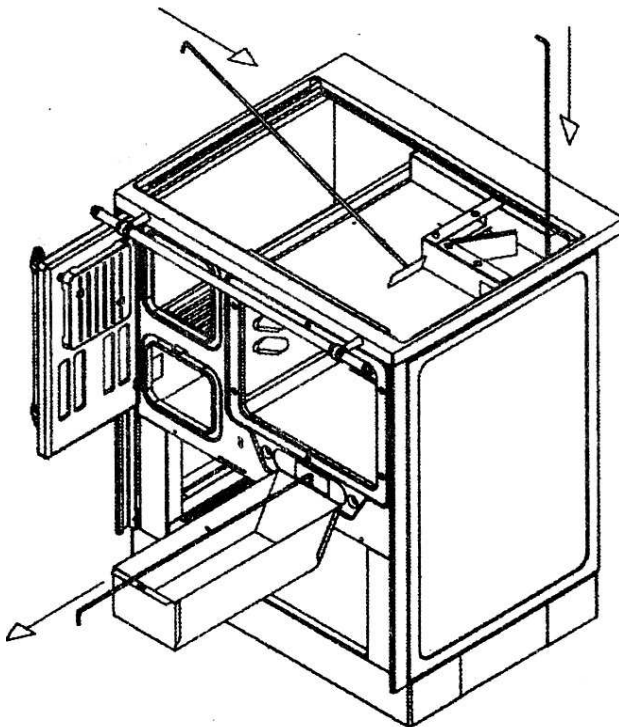


Fig. 11

Cleaning of glass surfaces – firebox glass gets dirty during operation. For cleaning, use soft detergents. Do not use abrasive agents since glass surface may get damaged. Clean glass when it's cold.

Cleaning and maintenance of the chimney- cleaning and control of the chimney is recommended at least once a year as well as after longer inactivity. Regular maintenance and control of the chimney will prevent origination of fire and weak operation.

IRREGULARITIES IN OPERATION AND TROUBLESHOOTING

In the following table, there are most frequent operating irregularities and troubleshooting.
Table: Display of the most frequent irregularities, possible causes and troubleshooting.

Problem	Possible cause	Remedy
Stove weakly heats and cooks	<ul style="list-style-type: none"> Irregular handling Bad chimney 	<ul style="list-style-type: none"> Carefully read and observe manual In case if all conditions from the manual are fulfilled and problem still persists, call service
Problems with firing up	<ul style="list-style-type: none"> closed air intake regulator wet woods lack of oxygen 	<ul style="list-style-type: none"> open air intake regulator and provide primary air intake use dry woods ventilate the room to provide fresh air
Smoke is coming below the plate	<ul style="list-style-type: none"> closed air intake regulator lack of air flow unclean ash from the grid 	<ul style="list-style-type: none"> open air intake regulator and provide primary air intake carefully read manual and apply tips for providing air flow clean the grid
Firebox door glass has tar after a short period of operation	<ul style="list-style-type: none"> wet woods too much fuel lack of air flow closed secondary air intake 	<ul style="list-style-type: none"> use dry woods see recommended amount of fuel for combustion given in the manual check connection with the chimney carefully read manual and apply tips for providing secondary air

GENERAL NOTES

If all installation recommendations, operating and cleaning regulation given in this manual are met, stove represents proven and safe household device.

Prior to installation, remove the package. Take care of possible injuries since wooden battens on packaging have nails. Dispose of plastic bag in the proper place according to the local regulations. Old stove which will not be used in the future should be disposed of according to the local regulations.

All claims, evaluated as defects or weak functioning of the stove should be reported to manufacturer or authorized service via phone or in written form with fiscal bill attached. All contact information is given at the end of this manual.

All defects on the stove are to be repaired exclusively by the manufacturer.

If unauthorized personnel make any servicing or repairs or changes, owner of the stove will lose the right to service guaranteed by the manufacturer.

Procurement of spare parts is to be done exclusively through manufacturer, based on positions and figures or their names in this manual.

Manufacturer shall not bear any liability if purchaser does not observe instructions and installation manual.

ADVICES FOR ENVIRONMENTAL PROTECTION

Packaging

- Packaging material may be 100 % recycled.
- At disposing of the waste, observe local regulations.
- Packaging material (plastic bags, parts of polystyrene-styropor etc.) should be kept out of reach of children, since it is potential source of danger.
- Pay attention to safety during removal and disposing of wooden battens since they are nailed.

Product

- Device is made of materials which may be recycled. At the disposal of waste, Observe local environmental laws.
- Use only recommended fuels.
- It is forbidden to burn inorganic and organic waste (plastic, cardboard, textile, oiled wood etc.), since within combustion it discharges cancerous and other harmful materials.

A.D. "Milan Blagojević" Smederevo
Đure Strugara 20
11300 Smederevo
tel: 026 633 600
026 633 601
Fax: 026 226 926
E-mail: servis@mbs.rs
www.mbs.rs